

# **Port Saunders Breakwater Wharf Construction and Dredging**

## **Environmental Registration Document**

**Submitted to the Government of Newfoundland and Labrador**

**Department of Environment**

**Environmental Assessment Division**

**Prepared For:** **Department of Fisheries and Oceans**  
**Small Craft Harbours Branch**

**Prepared By:** **Public Works & Government Services Canada**  
**Environmental Services**

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**Project No.:** **310721 / 313073**

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**1.0 NAME OF UNDERTAKING:**

Port Saunders Breakwater Wharf Construction and Dredging (P/N 310721 / 313073)

**2.0 PROPOSER:**

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**3.0 THE UNDERTAKING:**

The proposed development covers the construction of a new CCA treated timber cribwork breakwater wharf extending from the existing marginal wharf, the dredging of the berthing area along the existing marginal wharf, and the construction of a new site access road.

The project will provide Port Saunders with the necessary berthing and adequate protection for the existing facilities. The berthing area at Port Saunders is currently inadequate for the larger vessels wishing to utilize the site. The proposed dredging will increase the depth of the basin along the existing marginal structure to provide sufficient draft for those vessels. The breakwater wharf construction will provide protection for the existing marginal structure, as well as increase the berthing area at the site. The new breakwater wharf will be utilized for fair weather berthing on the seaward side and all weather berthing on the leeward side of the structure. The new site access road will provide unrestricted and safe public access to the DFO SCH's facility.

## **4.0 DESCRIPTION OF THE UNDERTAKING:**

### **4.1 Geographical Location:**

The proposed project is located in the Town of Port Saunders on the Great Northern Peninsula, NL. Port Saunders is a fishing community situated approximately one hundred and ninety-seven (197) kilometres in a straight line Northeast of the City of Corner Brook, in the federal district of Humber-St. Barbe-Baie Verte. The project site is located at the Department of Fisheries and Oceans Small Craft Harbours (DFO SCH) marginal wharf at the Marine Service Centre site at coordinates 50 38 48 N and 57 16 25 W (Topographic Map 12-I/11, Port Saunders) on the northern shore of Ingornachoix Bay, approximately 400 metres west of Kent Point.

According to 2001 DFO statistics, this Class "B" harbour serves fifty-eight (58) enterprises operating from fifty-eight (58) vessels with total vessel length of five hundred and seventy-two (572) metres. Home vessels reported a total landed weight of 3,822,755 kgs representing a landed value of \$5,397,470 in 2001. In addition, transient vessels from other parts of Newfoundland as well as Quebec and New Brunswick, reported a total landed weight of 3,193,358 kgs representing a landed value of \$4,196,263 in 2001. Port Saunders is also used by transport vessels that use this site to offload product from a processing plant on the north shore of Quebec for transhipment by road to processing plants in other parts of the province. There is a local Harbour Authority at Port Saunders.

### **4.2 Physical Features:**

The immediate upland area is a man-made infill that was developed in the early 1970's as part of a federal-provincial government funded initiative to construct a Marine Service Centre, which is now privately owned. This private enterprise carries out major construction, reconstruction, and repair work to many fishing vessels from all parts of the island. In addition vessels are stored on the center during the winter months.

The Small Craft Harbours facilities at the site presently consist 190 LM. of treated dimension timber marginal wharf and a 30.50 LM. treated dimension timber finger pier. Adjacent to the SCH property there are two (2) travel lift wharves owned by private company complete with a repair building. The upland area has asphalt pavement surface immediately behind the marginal structure and has an Ice making facility owned by a private operator. Additionally, there is a Harbour Authority Building in upland area.

The undeveloped upland area is moderate to densely vegetated with native grass, native shrub, and coniferous vegetation and slopes gently back towards the Port Saunders / Port au Choix access road, located approximately 200 metres to the North.

There are a variety of small mammals and birds found on the island including several species of songbirds, moose, black bear, lynx, snowshoe hare, and caribou in the higher elevations between forest and upland tundra. The marine environment around the island provides habitat for a variety of whales, seals, and salmon during the summer months, and lobster, crab, herring, mackerel, capelin, and groundfish throughout the year. The project site does not contain any important, sensitive, threatened or endangered environmental components that are likely to be affected by the project.

The community is within the distribution range of many species of mammals, birds, fish and insects placed on the Species At Risk list by Environment Canada, including Short-eared Owl, Atlantic Cod, Atlantic Wolffish, Woodland Caribou, Harlequin Duck, Spotted Wolffish, and Fernald's Braya.

According to the Newfoundland and Labrador Aquaculture Geographic Information System, there is an Atlantic Cod Development site along the northeast side of Keppel Island registered to Eugene Caines.

The purpose of this project is to provide additional protection and berthing for the DFO SCH marginal wharf. The new construction will consist of:

1. Construction of a treated timber cribwork breakwater wharf measuring 7315 mm wide with a 64517 mm long stem section and a 64593 mm long headblock.
2. Construction of a new electrical shed to incorporate newly modified electrical systems.
3. Upgrade electrical service to provide shore power to the existing marginal structure, existing small boat basin on east end of structure and to new breakwater structure.
4. Install new water system for existing and new structures.
5. Dredging of approximately 750 m<sup>3</sup> of class 'B' dredging over 1100 m<sup>2</sup> area along existing marginal structure to provide adequate draft for vessels.
6. Construction of a new 6.1 metre wide by 350 metre long site access road from the eastern boundary of the DFO SCH property to the existing Port Saunders / Port au Choix access road.
7. Infill of approximately 3063 m<sup>2</sup> of intertidal area on the upland side of the new site access road for use as parking and general service area.

#### **4.3 Construction:**

Project design is underway and should enable tendering in the fall of 2004. The project is scheduled to be completed over a multi-year period, as client resources permit, likely commencing in 2004 with the construction of the site access road. The breakwater wharf construction is currently scheduled for 2005 and 2006.

The project covers the construction of a CCA treated timber cribwork breakwater wharf measuring 7315 mm wide with a 64517 mm long stem section and a 64593 mm long headblock. The breakwater wharf will be placed over a rock mattress constructed with approximately forty-five hundred cubic metres (4500 m<sup>3</sup>) of rock material, which will likely displace a footprint of approximately twenty-five hundred square metres (2500 m<sup>2</sup>). Thirty-five hundred cubic metres (3500 m<sup>3</sup>) of armour stone material will be installed along the toe of the rock mattress to prevent scouring. The new breakwater wharf will include a 250 mm reinforced concrete deck, new untreated hardwood fenders, chocks, and ladders, CCA treated coping and wheelguard, mooring cleats and rings, and new electrical services.

The new electrical system will consist of a newly constructed wooden framed electrical shed to house the new electrical systems. There will be site lighting installed to provide adequate security lighting over the site facilities. As well, new electrical pedestals will be installed to provide shore power to all areas of the new wharf structure.

The new wharf structure will have a new 50 mm diameter waterline with 25 mm hose bibs installed and made operational. The water will be supplied from the existing service adjacent to the Harbour Authority Building.

The breakwater rock materials will be obtained from an approved licensed quarry and trucked to the project site where excavators will place the materials. The quarry source and specifications are not available at this time as that will be determined after award of the contract, before construction. The successful contractor will be required to obtain all the required regulatory approvals.

A new 6.1 metre wide by 350 metre long site access road will be constructed from the eastern boundary of the DFO SCH's property, along the shoreline, and proceed upland to connect with the existing Port Saunders / Port au Choix access road. The DFO SCH's site is currently accessed through the privately owned Marine Service Centre property which is often congested with vehicle, vessel, and marine haul out equipment traffic, resulting in limited and often unsafe access to tractor trailers, fishers, and the general public. The new site access road will provide unrestricted public access to the DFO SCH's facility. The road access will be constructed with pit run gravel with a 150 mm thick layer of Class 'B' material and 150 mm thick layer of Class 'A' material. The road will be surfaced with 75 mm thick layer of asphalt pavement, which will likely be completed during the 2005/06-construction season. Scour protection will be placed along the seaward side of the road in order to prevent erosion from wind and tide. A portion of the marginal structure located on the Eastern side of the SCH facility will be removed to accommodate the construction of the new access road.

An intertidal area of approximately 3063 m<sup>2</sup> located on the upland side of the new site access road will be infilled with quarry source rock and Class B material for use as parking and general service area. The area will be capped with Class A material and likely paved when client funding resources allow.

The dredging component of the project covers the removal of approximately seven hundred and fifty cubic meters ( $750 \text{ m}^3$ ) of Class “B” (cobble, gravel, and sand) material from an area approximately eleven hundred square metres ( $1100 \text{ m}^2$ ) along the existing SCH’s marginal structure to provide adequate draft. The site will be dredged to a grade elevation of approximately  $-4.5 \text{ m}$  below L.N.T. The successful contractor in consultation with Public Works and Government Services Canada and appropriate regulators will determine the specific dredging methodology. Given the close proximity of the target dredge are to the existing marginal wharf, it is likely that the dredging will be carried out using a long-reach excavator operating from the wharf deck.

As part of this project’s preplanning process, three (3) marine sediment samples were collected from the proposed dredge site and submitted for chemical analysis. Sample #1 exceeded CCME Industrial Guidelines for copper, benzo(a) anthracene, and benzo(a) pyrene. Sample #3 exceeded CCME Industrial Guidelines for copper, lead, and zinc. The samples were then leached according to EPA Method 1311 (TCLP) and the leachate solutions analyzed by Inductively Coupled Plasma Mass Spectrometry. (Reference *Maxxam Report Job No: A404881, February 13, 2004*). All leachate samples complied with the requirements of the Newfoundland Department of Government Services and have been approved for disposal at the Regional Waste Disposal site, subject to the approval of the waste disposal site owner / operator.

There are no other viable or cost-effective options to the current proposal. The status quo will result in continued threat of damage to vessel users, disruption of fishing operations, and Departmental liability.

This proposal will have an expected service life of 40+ years and a minimum of 10 years maintenance free for the timber structure. No major capital expenditures are anticipated for at least 20 years.

#### **4.4 Operation:**

The proposed new breakwater wharf will provide Port Saunders with the necessary berthing and adequate protection for the existing facilities. The berthing area at Port Saunders is currently inadequate for the larger vessels wishing to utilize the site. The proposed dredging will increase the depth of the basin along the existing marginal structure to provide sufficient draft for those vessels. The breakwater wharf construction will provide protection for the existing marginal structure, as well as increase the berthing area at the site. The new breakwater wharf will be utilized for fair weather berthing on the seaward side and all weather berthing on the leeward side of the structure. The new site access road will provide unrestricted and safe public access to the DFO SCH’s facility. Construction of an electrical shed is required to house all site electrical equipment, both new and existing, while the new water system will be utilized during wash down operations at the site.

Routine maintenance and repair projects, including repairs or replacement of damaged or deteriorated fenders, wales, wheel guard, chocks, and ladders, will be carried out on an as required basis over the estimated forty (40) year life of the

structure. There is no annual or regular dredging program proposed for this Small Craft Harbours site. Minor dredging will be proposed as required.

The operation and maintenance of the facility will be under the control of the Port Saunders Harbour Authority with the support of Small Craft Harbours.

**4.5 Potential Resource Conflict:**

Listed below are project related activities that have potential to cause environmental issues, and the actions required to mitigate these effects.

**4.5.1 Navigation:**

*Environmental Concern*

Breakwater wharf construction has the potential to interfere with vessel navigation.

*Mitigation*

Transport Canada has been consulted regarding the application of the Navigable Waters Protection Act and the project has received NWPA 5(2) approval. All conditions and stipulations provided by Transport Canada must be implemented and complied with by the proponent. The Harbour Authority will coordinate all vessel activities within the harbour for the duration of the project.

**4.5.2 Benthic Habitat:**

*Environmental Concern*

The breakwater structure and dredging will displace more than 3600 m<sup>2</sup> of bottom substrate material and result in the destruction of fish habitat. The new site access road and parking / service area will displace an additional 3063 m<sup>2</sup> of intertidal habitat.

*Mitigation*

The proponent is required to obtain the approval of the DFO Area Habitat Biologist prior to undertaking the project. The mitigations stipulated in the DFO Letter of Advice are designed to protect fish and fish habitat and will be adhered to. The placement of the rock mattress and armour stone will likely create additional lobster habitat in the interspatial areas of the structure. No significant aquatic vegetation or fish habitat is known to exist within the affected area.

**4.5.3 Marine Water Quality:**

*Environmental Concern*

Placement of the breakwater and road construction materials and dredging of the ocean bottom has the potential to conflict with the marine habitat by introducing suspended sediments into the water column.

There is also potential for accidental spills of hydrocarbon products from heavy equipment machinery.

*Mitigation*

This sedimentation will be short-term and should quickly dissipate due to wave and tidal action.

Machinery must be checked for leakage of lubricants or fuel and must be in good working order. Refuelling must be done at least 30m from any water body. Basic petroleum spill clean-up equipment should be on-site. All spills or leaks should be promptly contained, cleaned up and reported to the 24-hour environmental emergencies report system (1-800-563-2444).

**4.5.4 Health & Safety:**

*Environmental Concern*

Project activities may be a risk to the project construction workers and the general public.

*Mitigation*

The new site access road will provide unrestricted and safe public access to the DFO SCH's facility.

Access to work areas is to be controlled and restricted to construction personnel. The contractor will be required to develop a site-specific safety plan.

Excavator(s) and dump trucks will be used throughout the duration of the construction period. Equipment and construction materials will be transported to the site via the existing road network. Some minor impacts from dump truck traffic due to speed, noise, spillage or traffic congestion are anticipated. Reduced speed limits and appropriate signage will be put in place, if warranted. Local municipal construction bylaws will be adhered to. With appropriate mitigations in place, minimal adverse environmental effects, as a result of construction, are predicted.

The fishery in the project area is seasonal in nature. The project is scheduled for a period when there will be fishing activity, and some disruption to harbour operations and navigation is anticipated. Any construction activities that could result in any significant interference will be discussed and coordinated with the local Harbour Authority. The project was referred to Transport Canada for assessment under Section 5(2) of the Navigable Waters Protection Act. Any requirements such as

Notice to Mariners, etc. that might be stipulated by the NWPA, will be adhered to.

No recreational activities are known to take place at the project site. Any activity that could result in conflict or interference with any potential recreational activities will be discussed and coordinated with local facility users.

**4.5.5 Air Quality:**

*Environmental Concern*

Construction activities could result in nuisance impacts due to noise and dust.

*Mitigation*

There will be a short-term increase in the noise levels at the site as a result of this project. Noise will originate from the use of heavy equipment (excavator and trucks) throughout the construction period. All construction equipment must be fitted with standard and well-maintained noise suppression devices. Lower noise levels are anticipated from power tools such as hammers, drills and chainsaws. To mitigate potential effects to local residents, construction activity will be carried out during daylight hours to minimize disturbances and local municipal construction by-laws will be adhered to. There will be no increased level of noise after the completion of the project.

Appropriate dust suppression methods are to be employed when required.

**4.5.6 Aesthetics:**

*Environmental Concern*

There is potential for local aesthetics to be affected by the proposed project.

*Mitigation*

The breakwater will remain low enough as to not permanently hinder the view provided from the shoreline. The contractor is required to return the site to its original condition prior to the conclusion of the project.

**4.6 Occupation:**

The following list outlines occupations, which will be employed during the design and construction period.

- 4 – Professional Engineers
- 2 – Engineering Technicians

2 – Surveyors  
1 – Rod and Chainmen  
1 – Construction Inspector  
1 – Draftsperson  
1 – Secretary  
6 – Laborers  
5 – Heavy Equipment Operators  
15 – Truck Drivers  
2 – Flag People  
4 – Drillers/Blasters  
1 – Office Clerk  
1- Construction Foremen/Superintendents

#### **4.7 Project-Related Documents:**

To date, there are no project related documents available.

#### **5.0 APPROVAL OF THE UNDERTAKING:**

The following is a list of the main permits, licences and approval required for this project.

<b>Approvals/Certificate/Permits</b>	<b>Regulatory Authority</b>
Environmental Registration	NL Department of Environment and Conservation Environmental Assessment Division
Habitat Letter of Advice	Department of Fisheries and Oceans
Application for Environmental Approval to Alter a Body of Water	NL Department of Environment and Conservation Water Resources Division
Navigable Waters Protection Approval	Transport Canada
Waste Disposal Approval	NL Government Services Centre Site Owner / Operator
Quarry Permit	NL Department of Mines and Energy
Lease / Permit to Occupy Crown Lands	NL Government Services Centre
Protected Road Zoning and Development Control Approval	NL Government Services Centre

#### **6.0 SCHEDULE:**

This project is expected to go to tender in the fall of 2004. The project is scheduled to be completed over a multi-year period, as client resources permit, likely commencing in 2004 with the construction of the site access road. The breakwater wharf construction is currently scheduled for 2005 and 2006.

**7.0 FUNDING:**

The Department of Fisheries and Oceans, Small Craft Harbours Branch will be providing the funding for this project. Approximate capital costs for the undertaking will be in the order of \$2,000,000.

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Date

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Signature of SCH Regional Engineer

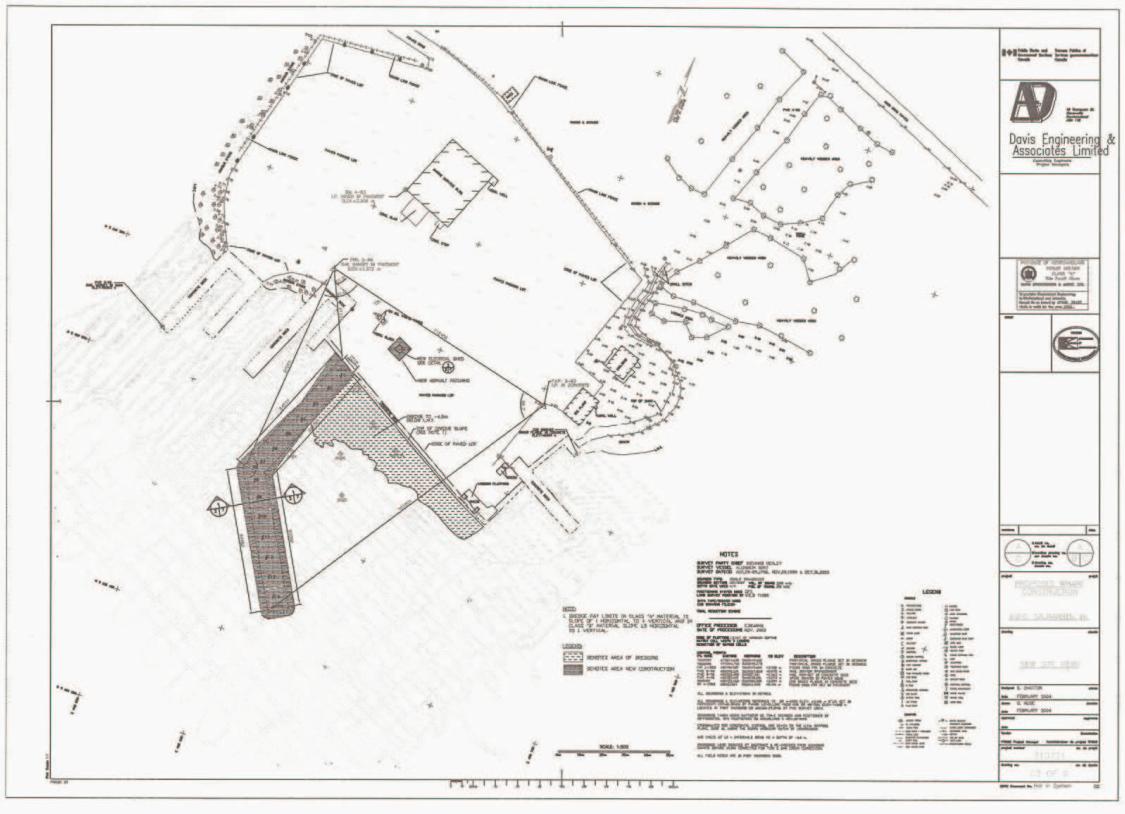
**APPENDIX A**  
**PHOTOS**

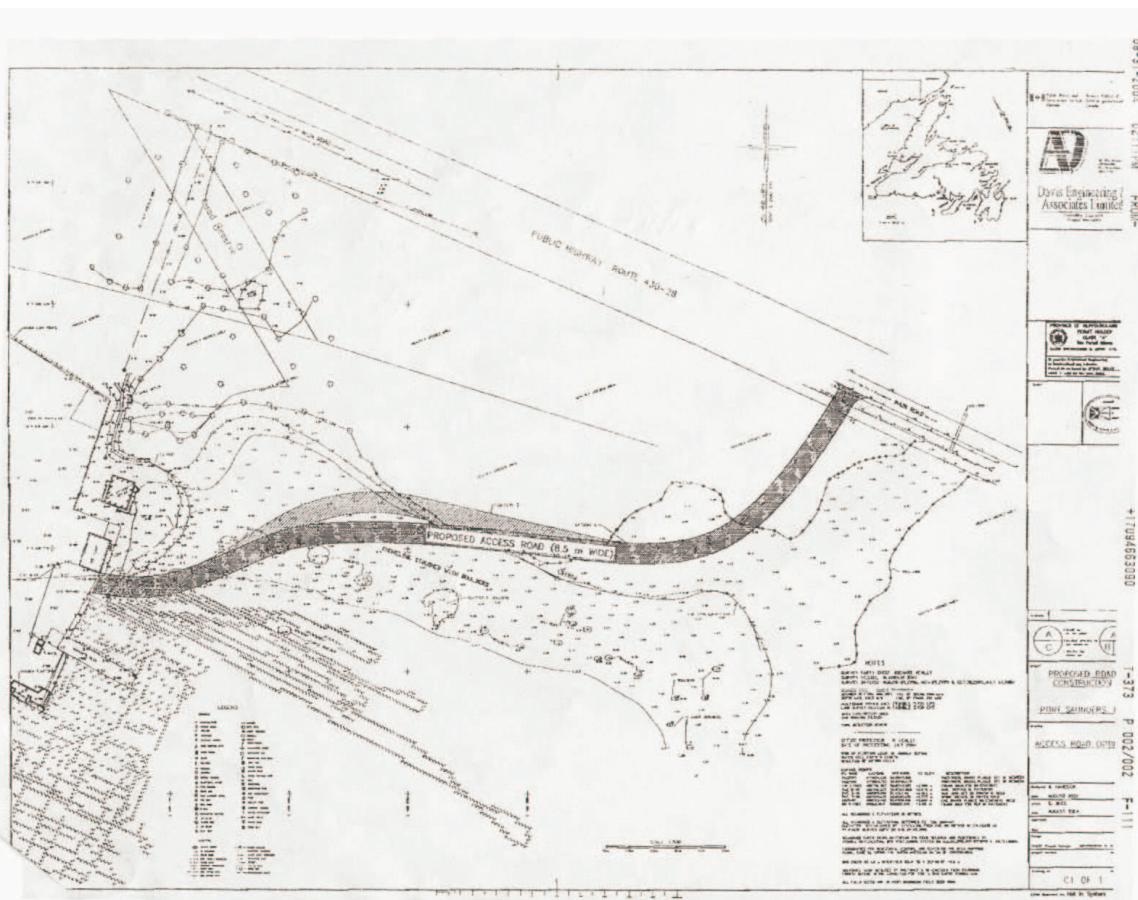
Port Saunders, Ingornachoix Bay, NL  
Breakwater Wharf Construction & Dredging



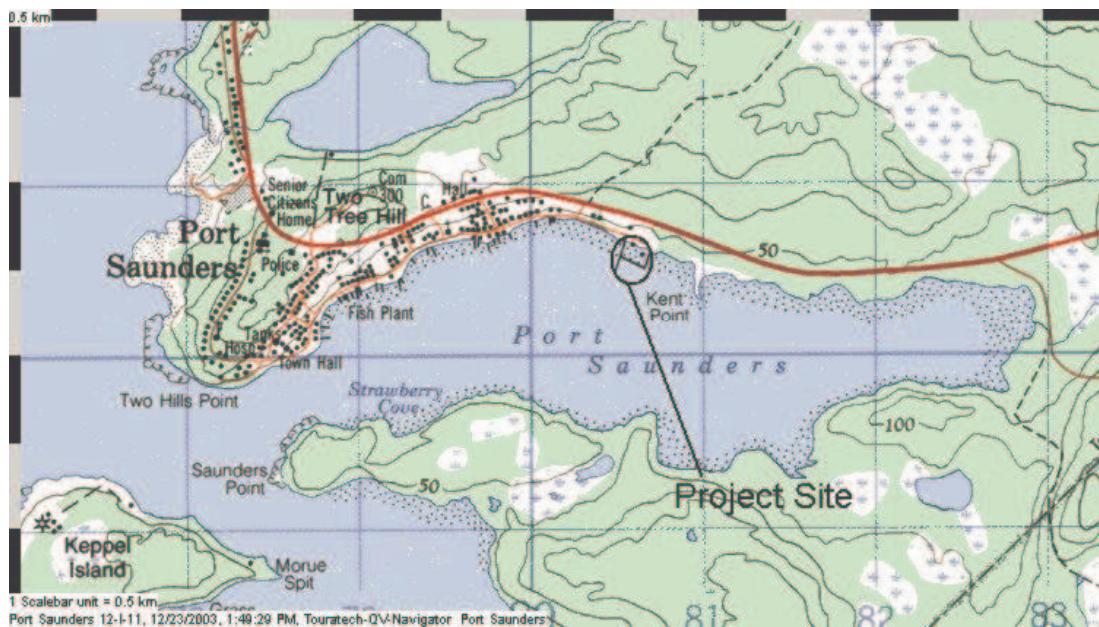


**APPENDIX B**  
**SITE PLANS**





**APPENDIX C**  
**TOPO MAP**



**APPENDIX D**  
**DFO SCH PROPERTY SITE PLAN**

